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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/543,771

DATE: 04/25/2000
TIME: 11:38:27

Input Set: I543771.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

ENTERED

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1  <110> APPLICANT: John P. Carulli et al.
2  <120> TITLE OF INVENTION: THE HIGH BONE MASS GENE OF 11q13.3
3  <130> FILE REFERENCE: 032796-013
4  <140> CURRENT APPLICATION NUMBER: US/09/543,771
5  <141> CURRENT FILING DATE: 2000-04-05
6  <150> EARLIER APPLICATION NUMBER: US 09/229,319
7  <151> EARLIER FILING DATE: 1999-01-13
8  <150> EARLIER APPLICATION NUMBER: US 60/071,449
9  <151> EARLIER FILING DATE: 1998-01-13
10 <150> EARLIER APPLICATION NUMBER: US 60/105,511
11 <151> EARLIER FILING DATE: 1998-10-23
12 <160> NUMBER OF SEQ ID NOS: 62
13 <210> SEQ ID NO 1
14 <211> LENGTH: 5120
15 <212> TYPE: DNA
16 <213> ORGANISM: Homo sapiens
17 <400> SEQUENCE: 1
18 actaaagcgc cgccgcccgcg ccatggagcc cgagtgcgcg cgccgcgggc ccgtccggcc 60
19 gccggacaac atg gag gca gcg ccg ggg ccg ccg tgg ccg ctg ctg 109
20 Met Glu Ala Ala Pro Pro Gly Pro Pro Trp Pro Leu Leu
21 1 5 10
22 ctg ctg ctg ctg ctg ctg ctg gcg ctg tgc gcc tgc ccg gcc ccc gcc 157
23 Leu Leu Leu Leu Leu Leu Leu Ala Leu Cys Gly Cys Pro Ala Pro Ala
24 15 20 25
25 gcg gcc tcg ccg ctc ctg cta ttt gcc aac cgc cgg gac gta cgg ctg 205
26 Ala Ala Ser Pro Leu Leu Leu Phe Ala Asn Arg Arg Asp Val Arg Leu
27 30 35 40 45
28 gtg gac gcc ggc gga gtc aag ctg gag tcc acc atc gtg gtc agc ggc 253
29 Val Asp Ala Gly Gly Val Lys Leu Glu Ser Thr Ile Val Val Ser Gly
30 50 55 60
31 ctg gag gat gcg gcc gca gtg gac ttc cag ttt tcc aag gga gcc gtg 301
32 Leu Glu Asp Ala Ala Val Asp Phe Gln Phe Ser Lys Gly Ala Val
33 65 70 75
34 tac tgg aca gac gtg agc gag gag gcc atc aag cag acc tac ctg aac 349
35 Tyr Trp Thr Asp Val Ser Glu Glu Ala Ile Lys Gln Thr Tyr Leu Asn
36 80 85 90
37 cag acg ggg gcc gcc gtg cag aac gtg gtc atc tcc gcc ctg gtc tct 397
38 Gln Thr Gly Ala Ala Val Gln Asn Val Val Ile Ser Gly Leu Val Ser
39 95 100 105
40 ccc gac ggc ctc gcc tgc gac tgg gtg ggc aag aag ctg tac tgg acg 445
41 Pro Asp Gly Leu Ala Cys Asp Trp Val Gly Lys Lys Leu Tyr Trp Thr
42 110 115 120 125
43 gac tca gag acc aac cgc atc gag gtg gcc aac ctc aat ggc aca tcc 493
44 Asp Ser Glu Thr Asn Arg Ile Glu Val Ala Asn Leu Asn Gly Thr Ser

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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|--|--|--|-----|--|--|--|--|--|-----|--|--|--|--|--|-----|--|--|--|--|--|--|
| 45 | | | | | | | | | | | | | | | | 130 | | | | | | 135 | | | | | | 140 | | | | | | | | | | | | |
| 46 | cgg | aag | gtg | ctc | ttc | tgg | cag | gac | ctt | gac | cag | ccg | agg | gcc | atc | gcc | | 541 | | | | | | | | | | | | | | | | | | | | | | |
| 47 | Arg | Lys | Val | Leu | Phe | Trp | Gln | Asp | Leu | Asp | Gln | Pro | Arg | Ala | Ile | Ala | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | 145 | | | | | | 150 | | | | | | 155 | | | | | | | | | | | | |
| 49 | ttg | gac | ccc | gct | cac | ggg | tac | atg | tac | tgg | aca | gac | tgg | ggt | gag | acg | | 589 | | | | | | | | | | | | | | | | | | | | | | |
| 50 | Leu | Asp | Pro | Ala | His | Gly | Tyr | Met | Tyr | Trp | Thr | Asp | Trp | Gly | Glu | Thr | | | | | | | | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | | 160 | | | | | | 165 | | | | | | 170 | | | | | | | | | | | | |
| 52 | ccc | cgg | att | gag | cgg | gca | ggg | atg | gat | ggc | agc | acc | cgg | aag | atc | att | | 637 | | | | | | | | | | | | | | | | | | | | | | |
| 53 | Pro | Arg | Ile | Glu | Arg | Ala | Gly | Met | Asp | Gly | Ser | Thr | Arg | Lys | Ile | Ile | | | | | | | | | | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | | 175 | | | | | | 180 | | | | | | 185 | | | | | | | | | | | | |
| 55 | gtg | gac | tcg | gac | att | tac | tgg | ccc | aat | gga | ctg | acc | atc | gac | ctg | gag | | 685 | | | | | | | | | | | | | | | | | | | | | | |
| 56 | Val | Asp | Ser | Asp | Ile | Tyr | Trp | Pro | Asn | Gly | Leu | Thr | Ile | Asp | Leu | Glu | | | | | | | | | | | | | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | | | | | 190 | | | | | | 195 | | | | | | 200 | | | | | | 205 | | | | | | |
| 58 | gag | cag | aag | ctc | tac | tgg | gct | gac | gcc | aag | ctc | agc | ttc | atc | cac | cgt | | 733 | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Glu | Gln | Lys | Leu | Tyr | Trp | Ala | Asp | Ala | Lys | Leu | Ser | Phe | Ile | His | Arg | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | 210 | | | | | | 215 | | | | | | 220 | | | | | | | | | | | | |
| 61 | gcc | aac | ctg | gac | ggc | tcg | ttc | cgg | cag | aag | gtg | gtg | gag | ggc | agc | ctg | | 781 | | | | | | | | | | | | | | | | | | | | | | |
| 62 | Ala | Asn | Leu | Asp | Gly | Ser | Phe | Arg | Gln | Lys | Val | Val | Glu | Gly | Ser | Leu | | | | | | | | | | | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | | | 225 | | | | | | 230 | | | | | | 235 | | | | | | | | | | | | |
| 64 | acg | cac | ccc | ttc | gcc | ctg | acg | ctc | tcc | ggg | gac | act | ctg | tac | tgg | aca | | 829 | | | | | | | | | | | | | | | | | | | | | | |
| 65 | Thr | His | Pro | Phe | Ala | Leu | Thr | Leu | Ser | Gly | Asp | Thr | Leu | Tyr | Trp | Thr | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | | | | | | | | | | | | | | | | 240 | | | | | | 245 | | | | | | 250 | | | | | | | | | | | | |
| 67 | gac | tgg | cag | acc | cgc | tcc | atc | cat | gcc | tgc | aac | aag | cgc | act | ggg | ggg | | 877 | | | | | | | | | | | | | | | | | | | | | | |
| 68 | Asp | Trp | Gln | Thr | Arg | Ser | Ile | His | Ala | Cys | Asn | Lys | Arg | Thr | Gly | Gly | | | | | | | | | | | | | | | | | | | | | | | | |
| 69 | | | | | | | | | | | | | | | | 255 | | | | | | 260 | | | | | | 265 | | | | | | | | | | | | |
| 70 | aag | agg | aag | gag | atc | ctg | agt | gcc | ctc | tac | tca | ccc | atg | gac | atc | cag | | 925 | | | | | | | | | | | | | | | | | | | | | | |
| 71 | Lys | Arg | Lys | Glu | Ile | Leu | Ser | Ala | Leu | Tyr | Ser | Pro | Met | Asp | Ile | Gln | | | | | | | | | | | | | | | | | | | | | | | | |
| 72 | | | | | | | | | | | | | | | | 270 | | | | | | 275 | | | | | | 280 | | | | | | 285 | | | | | | |
| 73 | gtg | ctg | agc | cag | gag | cgg | cag | cct | ttc | ttc | cac | act | cgc | tgt | gag | gag | | 973 | | | | | | | | | | | | | | | | | | | | | | |
| 74 | Val | Leu | Ser | Gln | Glu | Arg | Gln | Pro | Phe | Phe | His | Thr | Arg | Cys | Glu | Glu | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | 290 | | | | | | 295 | | | | | | 300 | | | | | | | | | | | | |
| 76 | gac | aat | ggc | ggc | tgc | tcc | cac | ctg | tgc | ctg | ctg | tcc | cca | agc | gag | cct | | 1021 | | | | | | | | | | | | | | | | | | | | | | |
| 77 | Asp | Asn | Gly | Gly | Cys | Ser | His | Leu | Cys | Leu | Leu | Ser | Pro | Ser | Glu | Pro | | | | | | | | | | | | | | | | | | | | | | | | |
| 78 | | | | | | | | | | | | | | | | 305 | | | | | | 310 | | | | | | 315 | | | | | | | | | | | | |
| 79 | ttc | tac | aca | tgc | gcc | tgc | ccc | acg | ggt | gtg | cag | ctg | cag | gac | aac | ggc | | 1069 | | | | | | | | | | | | | | | | | | | | | | |
| 80 | Phe | Tyr | Thr | Cys | Ala | Cys | Pro | Thr | Gly | Val | Gln | Leu | Gln | Asp | Asn | Gly | | | | | | | | | | | | | | | | | | | | | | | | |
| 81 | | | | | | | | | | | | | | | | 320 | | | | | | 325 | | | | | | 330 | | | | | | | | | | | | |
| 82 | agg | acg | tgt | aag | gca | gga | gcc | gag | gag | gtg | ctg | ctg | ctg | gcc | cgg | cgg | | 1117 | | | | | | | | | | | | | | | | | | | | | | |
| 83 | Arg | Thr | Cys | Lys | Ala | Gly | Ala | Glu | Glu | Val | Leu | Leu | Leu | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|-----|---|------|
| 95 | Arg Arg Ala Tyr Leu Asp Gly Ser Gly Ala Gln Thr Leu Val Asn Thr | |
| 96 | 400 405 410 | |
| 97 | gag atc aac gac ccc gat ggc atc gcg gtc gac tgg gtg gcc cga aac | 1357 |
| 98 | Glu Ile Asn Asp Pro Asp Gly Ile Ala Val Asp Trp Val Ala Arg Asn | |
| 99 | 415 420 425 | |
| 100 | ctc tac tgg acc gac acg ggc acg gac cgc atc gag gtg acg cgc ctc | 1405 |
| 101 | Leu Tyr Trp Thr Asp Thr Gly Thr Asp Arg Ile Glu Val Thr Arg Leu | |
| 102 | 430 435 440 445 | |
| 103 | aac ggc acc tcc cgc aag atc ctg gtg tcg gag gac ctg gac gag ccc | 1453 |
| 104 | Asn Gly Thr Ser Arg Lys Ile Leu Val Ser Glu Asp Leu Asp Glu Pro | |
| 105 | 450 455 460 | |
| 106 | cga gcc atc gca ctg cac ccc gtg atg ggc ctc atg tac tgg aca gac | 1501 |
| 107 | Arg Ala Ile Ala Leu His Pro Val Met Gly Leu Met Tyr Trp Thr Asp | |
| 108 | 465 470 475 | |
| 109 | tgg gga gag aac cct aaa atc gag tgt gcc aac ttg gat ggg cag gag | 1549 |
| 110 | Trp Gly Glu Asn Pro Lys Ile Glu Cys Ala Asn Leu Asp Gly Gln Glu | |
| 111 | 480 485 490 | |
| 112 | cgg cgt gtg ctg gtc aat gcc tcc ctc ggg tgg ccc aac ggc ctg gcc | 1597 |
| 113 | Arg Arg Val Leu Val Asn Ala Ser Leu Gly Trp Pro Asn Gly Leu Ala | |
| 114 | 495 500 505 | |
| 115 | ctg gac ctg cag gag ggg aag ctc tac tgg gga gac gcc aag aca gac | 1645 |
| 116 | Leu Asp Leu Gln Glu Gly Lys Leu Tyr Trp Gly Asp Ala Lys Thr Asp | |
| 117 | 510 515 520 525 | |
| 118 | aag atc gag gtg atc aat gtt gat ggg acg aag agg cgg acc ctc ctg | 1693 |
| 119 | Lys Ile Glu Val Ile Asn Val Asp Gly Thr Lys Arg Arg Thr Leu Leu | |
| 120 | 530 535 540 | |
| 121 | gag gac aag ctc ccg cac att ttc ggg ttc acg ctg ctg ggg gac ttc | 1741 |
| 122 | Glu Asp Lys Leu Pro His Ile Phe Gly Phe Thr Leu Leu Gly Asp Phe | |
| 123 | 545 550 555 | |
| 124 | atc tac tgg act gac tgg cag cgc cgc agc atc gag cgg gtg cac aag | 1789 |
| 125 | Ile Tyr Trp Thr Asp Trp Gln Arg Arg Ser Ile Glu Arg Val His Lys | |
| 126 | 560 565 570 | |
| 127 | gtc aag gcc agc cgg gac gtc atc att gac cag ctg ccc gac ctg atg | 1837 |
| 128 | Val Lys Ala Ser Arg Asp Val Ile Ile Asp Gln Leu Pro Asp Leu Met | |
| 129 | 575 580 585 | |
| 130 | ggg ctc aaa gct gtg aat gtg gcc aag gtc gtc gga acc aac ccg tgt | 1885 |
| 131 | Gly Leu Lys Ala Val Asn Val Ala Lys Val Val Gly Thr Asn Pro Cys | |
| 132 | 590 595 600 605 | |
| 133 | gcg gac agg aac ggg ggg tgc agc cac ctg tgc ttc ttc aca ccc cac | 1933 |
| 134 | Ala Asp Arg Asn Gly Gly Cys Ser His Leu Cys Phe Phe Thr Pro His | |
| 135 | 610 615 620 | |
| 136 | gca acc cgg tgt ggc tgc ccc atc ggc ctg gag ctg ctg agt gac atg | 1981 |
| 137 | Ala Thr Arg Cys Gly Cys Pro Ile Gly Leu Glu Leu Leu Ser Asp Met | |
| 138 | 625 630 635 | |
| 139 | aag acc tgc atc gtg cct gag gcc ttc ttg gtc ttc acc agc aga gcc | 2029 |
| 140 | Lys Thr Cys Ile Val Pro Glu Ala Phe Leu Val Phe Thr Ser Arg Ala | |
| 141 | 640 645 650 | |
| 142 | gcc atc cac agg atc tcc ctc gag acc aat aac aac gac gtg gcc atc | 2077 |
| 143 | Ala Ile His Arg Ile Ser Leu Glu Thr Asn Asn Asn Asp Val Ala Ile | |
| 144 | 655 660 665 | |

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| | | |
|-----|---|------|
| 145 | ccg ctc acg ggc gtc aag gag gcc tca gcc ctg gac ttt gat gtg tcc | 2125 |
| 146 | Pro Leu Thr Gly Val Lys Glu Ala Ser Ala Leu Asp Phe Asp Val Ser | |
| 147 | 670 675 680 685 | |
| 148 | aac aac cac atc tac tgg aca gac gtc agc ctg aag acc atc agc cgc | 2173 |
| 149 | Asn Asn His Ile Tyr Trp Thr Asp Val Ser Leu Lys Thr Ile Ser Arg | |
| 150 | 690 695 700 | |
| 151 | gcc ttc atg aac ggg agc tcg gtg gag cac gtg gtg gag ttt ggc ctt | 2221 |
| 152 | Ala Phe Met Asn Gly Ser Ser Val Glu His Val Val Glu Phe Gly Leu | |
| 153 | 705 710 715 | |
| 154 | gac tac ccc gag ggc atg gcc gtt gac tgg atg ggc aag aac ctc tac | 2269 |
| 155 | Asp Tyr Pro Glu Gly Met Ala Val Asp Trp Met Gly Lys Asn Leu Tyr | |
| 156 | 720 725 730 | |
| 157 | tgg gcc gac act ggg acc aac aga atc gaa gtg gcg cgg ctg gac ggg | 2317 |
| 158 | Trp Ala Asp Thr Gly Thr Asn Arg Ile Glu Val Ala Arg Leu Asp Gly | |
| 159 | 735 740 745 | |
| 160 | cag ttc cgg caa gtc ctc gtg tgg agg gac ttg gac aac ccg agg tcg | 2365 |
| 161 | Gln Phe Arg Gln Val Leu Val Trp Arg Asp Leu Asp Asn Pro Arg Ser | |
| 162 | 750 755 760 765 | |
| 163 | ctg gcc ctg gat ccc acc aag ggc tac atc tac tgg acc gag tgg ggc | 2413 |
| 164 | Leu Ala Leu Asp Pro Thr Lys Gly Tyr Ile Tyr Trp Thr Glu Trp Gly | |
| 165 | 770 775 780 | |
| 166 | ggc aag ccg agg atc gtg cgg gcc ttc atg gac ggg acc aac tgc atg | 2461 |
| 167 | Gly Lys Pro Arg Ile Val Arg Ala Phe Met Asp Gly Thr Asn Cys Met | |
| 168 | 785 790 795 | |
| 169 | acg ctg gtg gac aag gtg ggc cgg gcc aac gac ctc acc att gac tac | 2509 |
| 170 | Thr Leu Val Asp Lys Val Gly Arg Ala Asn Asp Leu Thr Ile Asp Tyr | |
| 171 | 800 805 810 | |
| 172 | gct gac cag cgc ctc tac tgg acc gac ctg gac acc aac atg atc gag | 2557 |
| 173 | Ala Asp Gln Arg Leu Tyr Trp Thr Asp Leu Asp Thr Asn Met Ile Glu | |
| 174 | 815 820 825 | |
| 175 | tcg tcc aac atg ctg ggt cag gag cgg gtc gtg att gcc gac gat ctc | 2605 |
| 176 | Ser Ser Asn Met Leu Gly Gln Glu Arg Val Val Ile Ala Asp Asp Leu | |
| 177 | 830 835 840 845 | |
| 178 | ccg cac ccg ttc ggt ctg acg cag tac agc gat tat atc tac tgg aca | 2653 |
| 179 | Pro His Pro Phe Gly Leu Thr Gln Tyr Ser Asp Tyr Ile Tyr Trp Thr | |
| 180 | 850 855 860 | |
| 181 | gac tgg aat ctg cac agc att gag cgg gcc gac aag act agc ggc cgg | 2701 |
| 182 | Asp Trp Asn Leu His Ser Ile Glu Arg Ala Asp Lys Thr Ser Gly Arg | |
| 183 | 865 870 875 | |
| 184 | aac cgc acc ctc atc cag ggc cac ctg gac ttc gtg atg gac atc ctg | 2749 |
| 185 | Asn Arg Thr Leu Ile Gln Gly His Leu Asp Phe Val Met Asp Ile Leu | |
| 186 | 880 885 890 | |
| 187 | gtg ttc cac tcc tcc cgc cag gat ggc ctc aat gac tgt atg cac aac | 2797 |
| 188 | Val Phe His Ser Ser Arg Gln Asp Gly Leu Asn Asp Cys Met His Asn | |
| 189 | 895 900 905 | |
| 190 | aac ggg cag tgt ggg cag ctg tgc ctt gcc atc ccc ggc ggc cac cgc | 2845 |
| 191 | Asn Gly Gln Cys Gly Gln Leu Cys Leu Ala Ile Pro Gly Gly His Arg | |
| 192 | 910 915 920 925 | |
| 193 | tgc ggc tgc gcc tca cac tac acc ctg gac ccc agc agc cgc aac tgc | 2893 |
| 194 | Cys Gly Cys Ala Ser His Tyr Thr Leu Asp Pro Ser Ser Arg Asn Cys | |

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| | | | | | | | | |
|-----|-----|-----|------|------|-----|-----|------|--|
| 195 | | 930 | | 935 | | 940 | | |
| 196 | agc | ccg | ccc | acc | ttc | ttg | ctg | ttc agc cag aaa tct gcc atc agt 2941 |
| 197 | Ser | Pro | Pro | Thr | Thr | Phe | Leu | Phe Ser Gln Lys Ser Ala Ile Ser |
| 198 | | | 945 | | | | 950 | 955 |
| 199 | cgg | atg | atc | ccg | gac | gac | cag | cac agc ccg gat ctc atc ctg ccc ctg 2989 |
| 200 | Arg | Met | Ile | Pro | Asp | Asp | Gln | His Ser Pro Asp Leu Ile Leu Pro Leu |
| 201 | | | 960 | | | | 965 | 970 |
| 202 | cat | gga | ctg | agg | aac | gtc | aaa | gcc atc gac tat gac cca ctg gac aag 3037 |
| 203 | His | Gly | Leu | Arg | Asn | Val | Lys | Ala Ile Asp Tyr Asp Pro Leu Asp Lys |
| 204 | | | 975 | | | | 980 | 985 |
| 205 | ttc | atc | tac | tgg | gtg | gat | ggg | cgc cag aac atc aag cga gcc aag gac 3085 |
| 206 | Phe | Ile | Tyr | Trp | Val | Asp | Gly | Arg Gln Asn Ile Lys Arg Ala Lys Asp |
| 207 | | | 990 | | | | 995 | 1000 1005 |
| 208 | gac | ggg | acc | cag | ccc | ttt | gtt | ttg acc tct ctg agc caa ggc caa aac 3133 |
| 209 | Asp | Gly | Thr | Gln | Pro | Phe | Val | Leu Thr Ser Leu Ser Gln Gly Gln Asn |
| 210 | | | | 1010 | | | | 1015 1020 |
| 211 | cca | gac | agg | cag | ccc | cac | gac | ctc agc atc gac atc tac agc cgg aca 3181 |
| 212 | Pro | Asp | Arg | Gln | Pro | His | Asp | Leu Ser Ile Asp Ile Tyr Ser Arg Thr |
| 213 | | | | 1025 | | | | 1030 1035 |
| 214 | ctg | ttc | tgg | acg | tgc | gag | gcc | acc aat acc atc aac gtc cac agg ctg 3229 |
| 215 | Leu | Phe | Trp | Thr | Cys | Glu | Ala | Thr Asn Thr Ile Asn Val His Arg Leu |
| 216 | | | 1040 | | | | | 1045 1050 |
| 217 | agc | ggg | gaa | gcc | atg | ggg | gtg | gtg ctg cgt ggg gac cgc gac aag ccc 3277 |
| 218 | Ser | Gly | Glu | Ala | Met | Gly | Val | Leu Arg Gly Asp Arg Asp Lys Pro |
| 219 | | | 1055 | | | | 1060 | 1065 |
| 220 | agg | gcc | atc | gtc | gtc | aac | gcg | gag cga ggg tac ctg tac ttc acc aac 3325 |
| 221 | Arg | Ala | Ile | Val | Val | Asn | Ala | Glu Arg Gly Tyr Leu Tyr Phe Thr Asn |
| 222 | | | 1070 | | | | 1075 | 1080 1085 |
| 223 | atg | cag | gac | cgg | gca | gcc | aag | atc gaa cgc gca gcc ctg gac ggc acc 3373 |
| 224 | Met | Gln | Asp | Arg | Ala | Ala | Lys | Ile Glu Arg Ala Ala Leu Asp Gly Thr |
| 225 | | | | 1090 | | | | 1095 1100 |
| 226 | gag | cgc | gag | gtc | ctc | ttc | acc | acc ggc ctc atc cgc cct gtg gcc ctg 3421 |
| 227 | Glu | Arg | Glu | Val | Leu | Phe | Thr | Thr Gly Leu Ile Arg Pro Val Ala Leu |
| 228 | | | 1105 | | | | | 1110 1115 |
| 229 | gtg | gtg | gac | aac | aca | ctg | ggc | aag ctg ttc tgg gtg gac gcg gac ctg 3469 |
| 230 | Val | Val | Asp | Asn | Thr | Leu | Gly | Lys Leu Phe Trp Val Asp Ala Asp Leu |
| 231 | | | 1120 | | | | | 1125 1130 |
| 232 | aag | cgc | att | gag | agc | tgt | gac | ctg tca ggg gcc aac cgc ctg acc ctg 3517 |
| 233 | Lys | Arg | Ile | Glu | Ser | Cys | Asp | Leu Ser Gly Ala Asn Arg Leu Thr Leu |
| 234 | | | 1135 | | | | | 1140 1145 |
| 235 | gag | gac | gcc | aac | atc | gtg | cag | cct ctg ggc ctg acc atc ctt ggc aag 3565 |
| 236 | Glu | Asp | Ala | Asn | Ile | Val | Gln | Pro Leu Gly Leu Thr Ile Leu Gly Lys |
| 237 | | | 1150 | | | | | 1155 1160 1165 |
| 238 | cat | ctc | tac | tgg | atc | gac | cgc | cag cag cag atg atc gag cgt gtg gag 3613 |
| 239 | His | Leu | Tyr | Trp | Ile | Asp | Arg | Gln Gln Gln Met Ile Glu Arg Val Glu |
| 240 | | | | 1170 | | | | 1175 1180 |
| 241 | aag | acc | acc | ggg | gac | aag | cgg | act cgc atc cag ggc cgt gtc gcc cac 3661 |
| 242 | Lys | Thr | Thr | Gly | Asp | Lys | Arg | Thr Arg Ile Gln Gly Arg Val Ala His |
| 243 | | | | 1185 | | | | 1190 1195 |
| 244 | ctc | act | ggc | atc | cat | gca | gtg | gag gaa gtc agc ctg gag gag ttc tca 3709 |

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Input Set: I543771.RAW

| Line | ? | Error/Warning | Original Text |
|------|---|-------------------------------------|---|
| 1323 | W | "N" or "Xaa" used: Feature required | cagcaagggc cagaacaggg atggccctgc ccaggggc |
| 1331 | W | "N" or "Xaa" used: Feature required | tccgtttcna aaaacaaaca aacaaacaaa taaacaaa |
| 1563 | W | "N" or "Xaa" used: Feature required | gcatgtgcct gtaatcccag ctacttagga ggnnnnct |
| 1653 | W | "N" or "Xaa" used: Feature required | gaagacctgg ctgtangtgg ggtangcang ctttctaa |
| 1654 | W | "N" or "Xaa" used: Feature required | tggagtggc angtttccga aaagaagaaa agctgact |
| 1655 | W | "N" or "Xaa" used: Feature required | ggaacangca ggcttcttgg aagaagaaaa tctggctg |
| 2643 | W | "N" or "Xaa" used: Feature required | ctggccaaga ctggcaccna gctacacana aagtatan |
| 2792 | W | "N" or "Xaa" used: Feature required | gcgtagaaag ccctgnaaac tggagggagc cctttgtc |
| 3296 | W | "N" or "Xaa" used: Feature required | ctttnttttt tttttttttt tttttttttt tttgaaat |